Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Science

Today we are going to do an experiment with the following materials:

1 cup whole milk 3-4 cups of crushed ice

1/4 tsp. vanilla measuring cups

4 tbsp. sugar measuring spoons

1 plastic cup 1 gallon size ziplock bag

1 plastic spoon 1 quart size ziplock bag

1/4 cup rock salt thermometer

1 small plastic cup

**Task One**: Which of the materials are solids? Which are liquids?

|  |  |
| --- | --- |
| Solid | Liquids |
|  |  |
|  |  |
|  |  |
|  |  |

**Based on the materials, what do you think we’ll be doing today?**

I think\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Read THROUGH the Procedure below, then write a hypothesis:**

**Step 1**. In the **plastic cup**, **mix** together the **milk, sugar, and vanilla**.

**Step 2**. **Take the temperature** of the mixture in the cup with a Celsius **thermometer**. **Record the temperature** of the mixture. Carefully **pour the mixture** from the cup into the **quart size Ziploc® bag**. Make sure there is **no air in the bag** and it has a **tight seal.**

**Step 3**. In **the large Ziploc® bag**, add 3-4 cups of ice. **Take the temperature** of the **ice** with a thermometer. **Record the temperature** on your data sheet.

**Step 4**. Add the **rock salt** to the **ice**. **Predict** what you think will happen to the ice.

I think\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Step 5**. Measure the temperature of the salt and ice mixture in the bag with the thermometer and record it.

**Step 6**. Place the **small** bag **inside** the **large** bag. Carefully close the large bag while **removing any excess air**. Make sure the bag has a tight seal.

**Step 7**. Shake the bag! Shake until **your teacher tells you to stop**. **Record the time** when you finish shaking.

**Step 8**. Using a plastic spoon, take one spoonful of the substance inside the bag and place it in the small plastic cup, then **take the temperature** of the substance using the thermometer. Record on chart below.

**Task Two**: Write a hypothesis **predicting** what you think will happen when you follow the procedure.

I think\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Task Three**: Follow the procedure. Record the results below:

|  |  |
| --- | --- |
|  | Temperature |
| **Milk Mixture** inside the plastic cup (step 2) | °C |
| **Ice** inside the bag (Step 3) | °C |
| **Salt/ Ice Mixture** in the gallon bag (step 4) | °C |
| Mixture in the sandwich bag **at the end** of the investigation | °C |
|  | Time (in sec.) |
| Starting time |  |
| Ending time |  |
| How long were you shaking the bag? |  |

**Explaining our Results**

**Task Four**: Explain what happened to the **milk mixture**.

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**Task Five**: Explain what happened to the **rock salt/ice mixture**.

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**Task Six**: Explain what the **independent** and **dependent** variables were in the experiment.

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**Task Seven:** Compare times with the other groups in the class. What was the shortest time? \_\_\_\_\_\_\_\_ What was the longest time? \_\_\_\_\_\_\_\_\_\_



**Task Eight:** How can you redo the experiment with **different variables**? Think about what you could change that would make it **take longer to get results** or a way to **get results more quickly**.

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